CHAPTER 3

METER

Music exists in time. Sounds, interspersed with silence, occur with specific duration and are replaced by more sound or silence of the same or different duration. These durations of sound and silence must be measured before it is possible to notate them.

THE BEAT

The standard of measurement in most musical time is the beat. Regularly recurring pulsations in music are known as *beats*. Beats in music are not of fixed duration; they are of longer or shorter duration as determined by the character of the music. The slower the music, the longer the duration of the beat; the faster the music, the shorter the duration of the beat.

Tempo refers to the rate of progression of beats and beat combinations. Slow tempi are comprised of beats of long duration; fast tempi are comprised of beats of short duration.

Beat Groupings

In most music, certain beats tend to assume more relative importance than others. These stronger, more accented beats may recur with regularity, establishing groups of two, three, or four beats. This recurring pattern of accented and unaccented pulsations is known as *meter.*

The term *metrical stress* describes these beat groupings. If the meter establishes groups of two, the metrical stress is *duple;* if three, *triple;* and if four, *quadruple.*

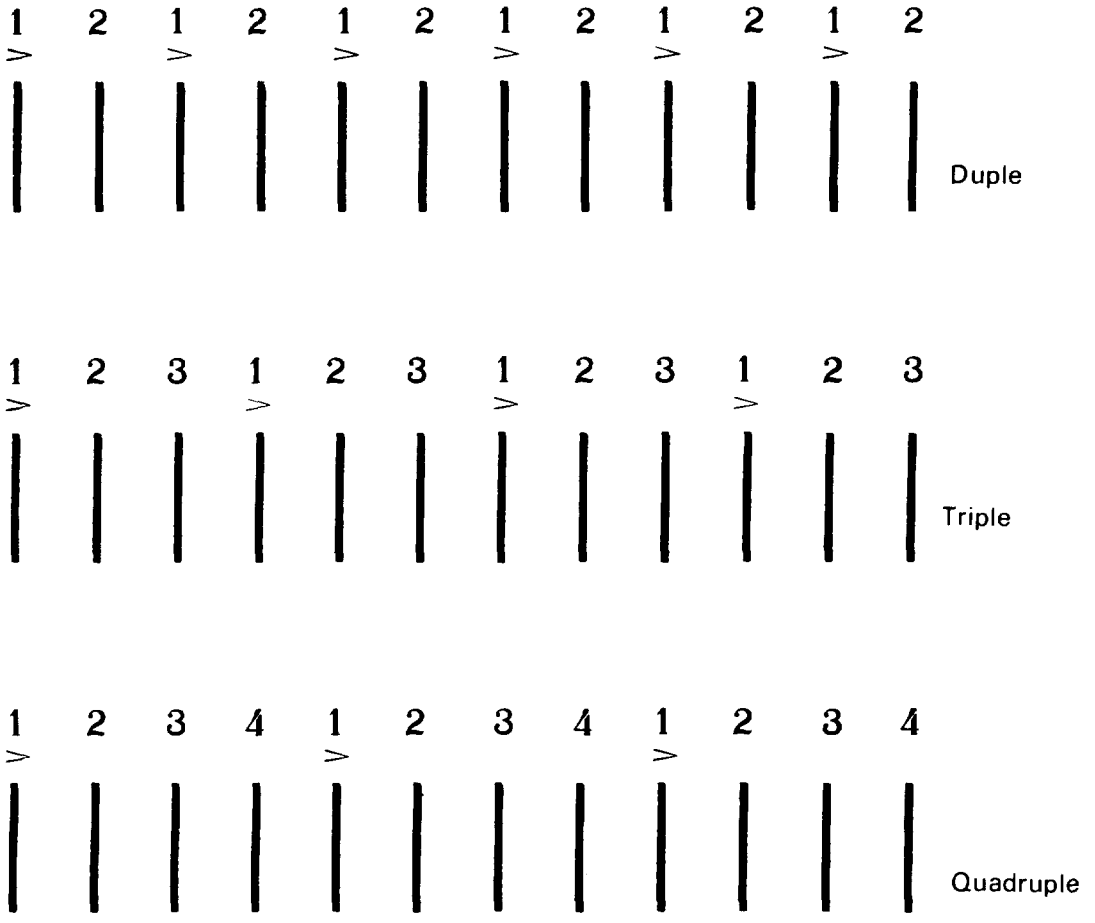


Figure 3.1: Beat Groupings.

Divided Beats

In addition to grouping of beats, most music has beats regularly divisible by two or three. *Metrical stress* also describes the division of the beat. When the beat is normally divisible by two, the metrical stress is *simple.* When the beat is normally divisible by three, the metrical stress is *compound.*

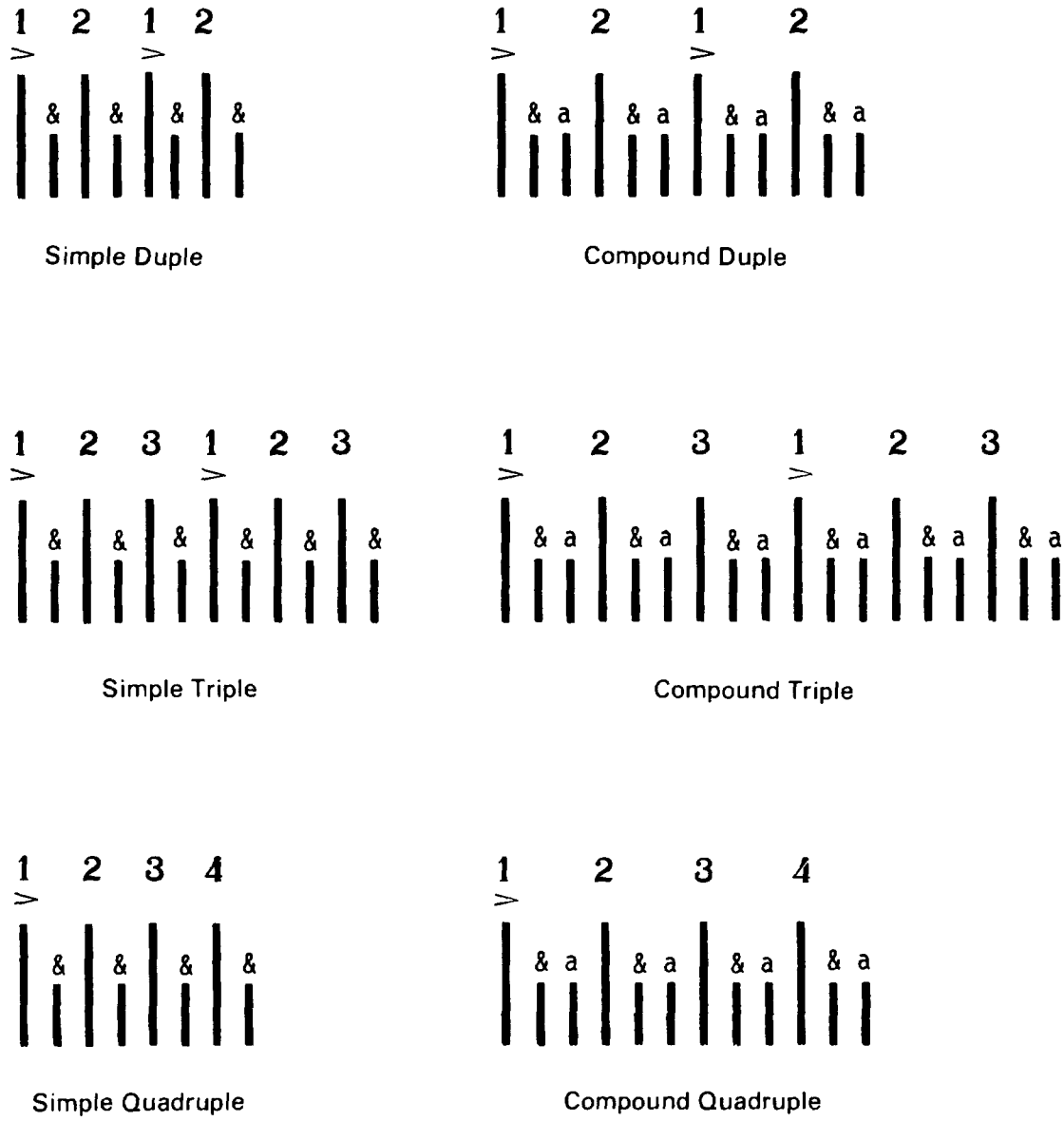


Figure 3.2: Division of Beat.

METER OR TIME SIGNATURE

The *meter or time signature* is a musical symbol which indicates metrical stress (meter) and unit of beat (notation). The unit of beat is the value that gets one beat. The meter or time signature is represented by two arabic numerals arranged vertically at the beginning of a staff or rhythm line (single line used for notating rhythm). The upper numeral indicates the metrical stress; the lower numeral indicates the unit of beat or division of beat.

In notation, the stronger, more accented beat in a beat grouping is indicated by placing a *bar line* vertically on a staff or through a rhythm line. The bar line precedes the note that begins the beat group. The space between any two adjacent bar lines is known as a *measure.* The word *bar* is commonly used to mean measure.

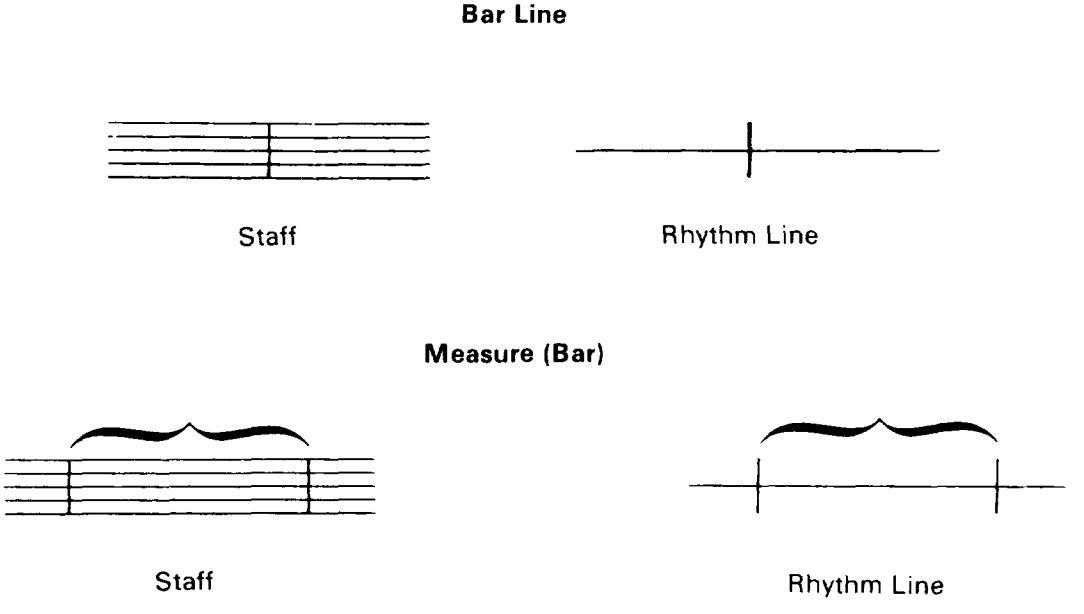


Figure 3.3: Bar Lines and Measures.

Simple Time Signatures

Any note divisible by two may be used as the unit of beat in *simple time.* Since unaltered note and rest values are normally divisible by two, any undotted note, except the sixty-fourth, may be used as the unit of beat (dividing the sixty-fourth is impractical). The lower numeral in a time signature is always 1, 2, 4, 8, 16 or 32, corresponding to the note value/name, and specifies the unit of beat. The most commonly used numerals, in order of frequency, are: 4, 2, 8, and 16. Duple, triple, or quadruple simple metrical stress is indicated by an upper numeral in a time signature of 2, 3, or 4 respectively.

Unit of Beat	Divided Beat	Duple	Triple	Quadruple
𝅝	𝅗𝅥 𝅗𝅥	2/1	3/1	4/1
𝅗𝅥	♩ ♩	2/2 (¢)	3/2	4/2
♩	♫	2/4	3/4	4/4 (C)
♪	𝅘𝅥𝅯𝅘𝅥𝅯	2/8	3/8	4/8
𝅘𝅥𝅯	𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯	2/16	3/16	4/16
𝅘𝅥𝅰	𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰	2/32	3/32	4/32

Figure 3.4: Simple Time Signatures.

Note that figure 3.4 lists two symbols (**C** and ¢) as abbreviations for simple time signatures. The symbol **C**, called *common time,* functions as 4/4. The symbol ¢, called *cut time* or *alla breve* (according to the breve or half note), functions as 2/2.

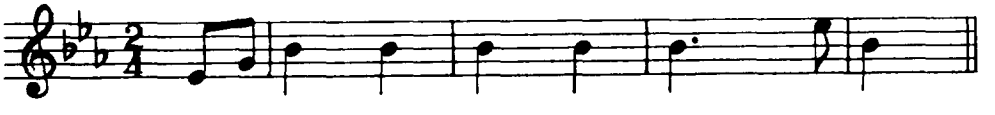


Figure 3.5: Simple Time Example.

In figure 3.5, the 2 indicates that the music is in simple duple time with each beat divisible by two. The 4 indicates that the quarter note is the unit of beat with the division of beat represented by eighth notes.

Compound Time Signatures

Any note divisible by three may be used as the unit of beat in *compound time.* Since dotted note and rest values are normally divisible by three, any dotted note, except the dotted sixty-fourth, may be used as the unit of beat (dividing the dotted sixty-fourth is impractical). In compound time, the lower numeral of a time signature will always be 2, 4, 8, 16, 32 or 64, corresponding to the note value/name. These numerals usually specify the division of beat. The unit of beat is derived by finding the dotted note value that is equal to three of the notes indicated by the lower numeral. The most commonly used numerals, in order of frequency, are: 8, 4, 2, and 16. Duple, triple or quadruple metrical stress is indicated by an upper numeral in a time signature of 6 (2 x 3 divisions of beat), 9 (3 x 3 divisions of beat), or 12 (4 x 3 divisions of beat) respectively.

Unit of Beat	Divided Beat	Duple	Triple	Quadruple
𝅗𝅥.	𝅗𝅥 𝅗𝅥 𝅗𝅥	6/2	9/2	12/2
𝅗𝅥.	♩ ♩ ♩	6/4	9/4	12/4
♩.	♫	6/8	9/8	12/8
𝅘𝅥𝅯.	𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯	6/16	9/16	12/16
𝅘𝅥𝅰.	𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰	6/32	9/32	12/32
𝅘𝅥𝅱.	𝅘𝅥𝅱𝅘𝅥𝅱𝅘𝅥𝅱	6/64	9/64	12/64

Figure 3.6: Compound Time Signatures.

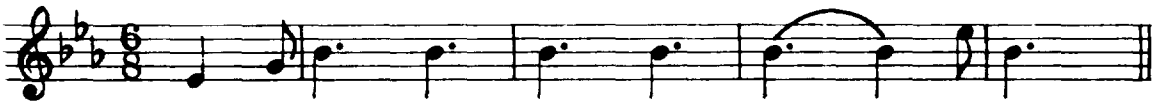


Figure 3.7: Compound Time Example.

In figure 3.7, the 6 indicates that the music is in compound duple time with each beat divisible into three parts. The 8 indicates that the eighth note is the division of beat with the unit of beat represented by the dotted quarter.

Some contemporary composers indicate compound time signatures with the actual number of beats as the upper numeral and a note value below.

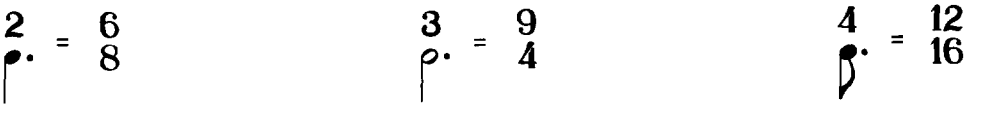
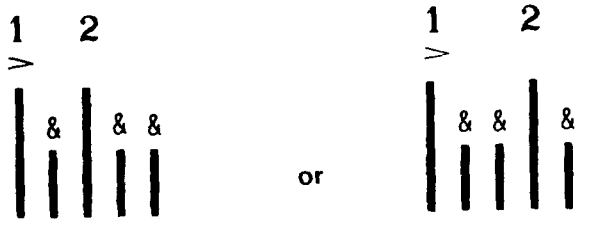


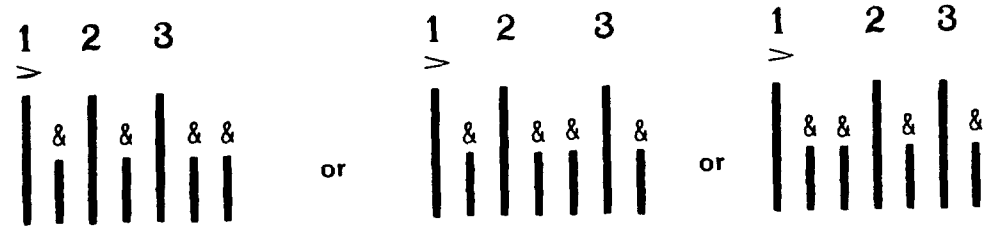
Figure 3.8: Contemporary Compound Examples.

COMPOSITE METER

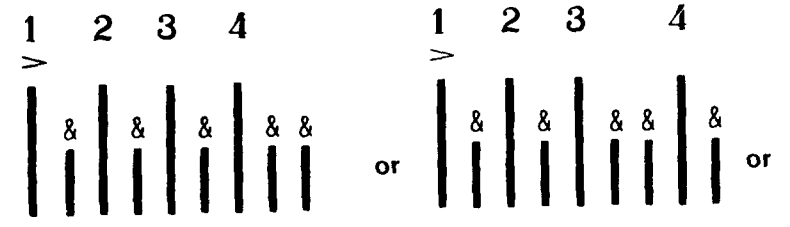
When music is composed of beats of unequal beat lengths, the metrical stress is *composite* or *complex*. The beats in composite meters will be divisible by two or three with the divided beats having the same duration.

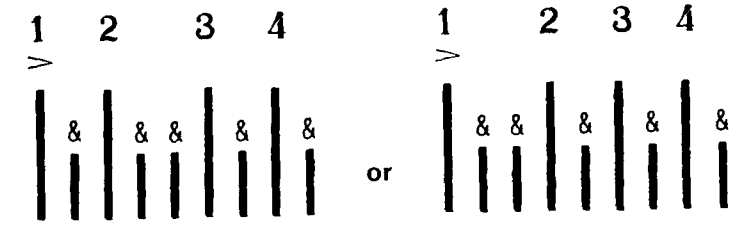


Composite Duple



Composite Triple





Composite Quadruple

Figure 3.9: Composite Division of Beat.

Composite Time Signatures

Notes divisible by two and three are required for the representation of the beat in *composite time.* The unit of beat will be represented by undotted and dotted notes of the same value. Composite time signatures may be notated in three ways:

the lower numeral as the divided beat and the upper numeral as the sum of divided beats in the measure, **or**

the lower numeral as the unit of beat and the upper numeral as a mixed numeral, **or**

the lower numeral as the divided beat and the upper numerals as the beat composites.

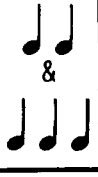
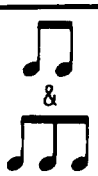
Meter Signatures	Unit of Beat	Divided Beat	Metrical Stress
$\frac{5}{4}$ $\frac{2\frac{1}{2}}{2}$ $\frac{2+3}{4}$ $\frac{3+2}{4}$			Composite Duple
$\frac{7}{8}$ $\frac{3\frac{1}{2}}{4}$ $\frac{2+2+3}{8}$ $\frac{2+3+2}{8}$ $\frac{3+2+2}{8}$			Composite Triple
$\frac{9}{8}$ $\frac{4\frac{1}{2}}{4}$ $\frac{2+2+2+3}{8}$ $\frac{2+2+3+2}{8}$ $\frac{3+2+2+2}{8}$ $\frac{2+3+2+2}{8}$			Composite Quadruple

Figure 3.10: Composite Time Signatures.

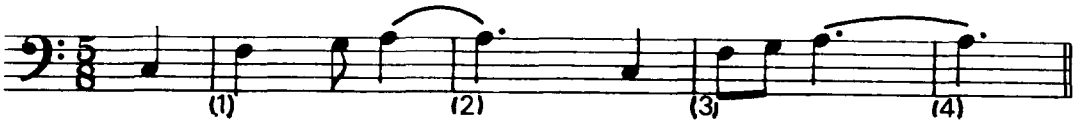


Figure 3.11: Composite Time Example.

In figure 3.11, the 5 indicates that the music is in composite duple time with one beat divisible into two parts and the other divisible into three parts (2+3 in bar 3 and 3+2 in bars 1 & 2). The 8 indicates the eighth note is the division of beat with unit of beat represented by the quarter and dotted quarter.

METRICAL STRESS EXCEPTIONS

If tempo is fast, a time signature with an upper numeral of 3 may call for a count of one beat per measure, which may require compound interpretation. This metrical stress is referred to as *compound single.*

If tempo is slow, a time signature with an upper numeral of 6, 9, or 12 may call for a count of 6, 9, or 12 beats per measure, and may require simple interpretation.

If tempo is slow, a time signature with an upper numeral of 2, 3, or 4 may call for a count of 4, 6, or 8 beats per measure.

A time signature with an upper numeral of 7, 10, 14, 15, 21, etc. may require simple or compound interpretation.

A time signature with an upper numeral of 2, 3, 4, 6, 8, 9, or 12 may require composite interpretation.